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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,507	06/30/2000	Salvador Palanca	042390.P8918	9545

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EXAMINER	
THAI, TUAN V	

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,507	PALANCA ET AL.	
	Examiner	Art Unit	
	Tuan V. Thai	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Part III DETAILED ACTION

Response to Amendment

1. This office action is in response to Applicant's communication filed August 05, 2002. This amendment has been entered and carefully considered. Claims 1-16 are pending. Claims 17-21 have been canceled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mattson (USPN: 5,717,893).

As per claims 1 and 7, Mattson teaches the invention as claimed including an apparatus and method for dynamically partitioning a cache array based upon requests for memory from an integrated device having plurality of processors (e.g. see abstract, column 3, line 66 bridging column 4, line 51; column 8, lines 14 et seq.);

As per claims 2 and 3, subdividing one or more ways/sets within the cache array (e.g. see column 3, lines 14 et seq., column 3, line 66 bridging column 4, line 51; column 8, lines 14 et seq.);

As per claim 4, using a single least recently used array to replace ways (e.g. see column 5, lines 28 et seq.);

As per claim 5, the pseudo LRU algorithm update based on an entry hit is taught by Mattson since single LRU-List is used for management and control of a single blocksize cache block (e.g. see column 5, lines 31 et seq.; column 8, lines 31 et seq.);

As per claim 6, the further limitation of partitioning the cache array into a direct-mapped is embedded in Mattson and being taught to the extent that it is claimed since Mattson discloses multiple prior arts, that are incorporated by references which discloses that there is only one possible location for each data entry (e.g. see column 2, lines 15 et seq.);

As per claim 8, an integrated device having a plurality of processors connected to the cache memory array (e.g. see figure 1);

As per claim 9, a main memory device connected to the cache memory array (e.g. see figure 3);

As per claim 10, plurality of processors having a graphics processor and a central processor is taught to the extent that it is being claimed (e.g. see figure 1, column 21, lines 20 et

seq.);

Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattson (USPN: 5,717,893).

As per claims 11-16; Mattson discloses the invention as claimed, detailed above with respect to claims 1-10; Mattson however does not particularly disclose a computer-readable medium of instructions to be implemented on a computer as being claimed in claims 11-16. However, one of ordinary skill in the art would have recognized that computer readable medium (i.e., floppy, cd-rom, etc.) carrying computer-executable instructions for implementing a method, because it would facilitate the transporting and installing of the method on other systems, is generally well-known in the art. For example, a copy of the Microsoft Windows operating system can be found on a cd-rom from

which Windows can be installed onto other systems, which is a lot easier that running a long cable or hand typing the software onto another system. The examiner takes Official Notice of this teaching. Therefore, it would have been obvious to put Mattson's program on a computer readable medium, because it would facilitate the transporting, installing and implementing of Mattson's program on other systems.

6. In response to Applicant's arguments that (a) Mattson does not disclose partitioning a cache array dynamically based upon requests for memory (pages 4-6), Examiner would like to note that dynamically partition is the partition in which the partition size is varied (independent or dependent of time) per memory request as opposed to the fix partition that commonly known in the art. Mattson clearly disclose the dynamic partition of his cache based upon memory requests; for example, Mattson teaches the object of his invention is to provide a means for logically partitioning the cache into partitions wherein ***the partition sizes can be changed or configured*** (DYNAMICALLY) to maximize hit ratios as opposed to the fix size partition in the conventional system (e.g. see column 4, line 66 bridging column 5, line 11). In response to (b) Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion,

or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art (page 6, first paragraph of Applicant's amendment). Examiner would like emphasize it has been held that the mere fact that the references relied on by the Patent and Trademark Office fail to evince an appreciation of the problem identified and solved by Applicant is not, standing alone, conclusive evidence of the non-obviousness of the claimed subject matter. The references may suggest doing what an Applicant has done even though workers in the art were ignorant of the existence of the problem. In addition, Examiner would like to emphasize that in considering a 35 USC 103 rejection, it is not strictly necessary that a reference or references explicitly suggest the claimed invention (this is tantamount to a 35 USC 102 reference if the modifications would have been obvious to those of ordinary skill in the art. It has been held that the test of obviousness is not whether the features of a secondary reference may be bodily incorporated into the primary references' structure, nor whether the claimed invention is expressly suggested in any one or all of the references; rather, the test is what the combined teachings of the reference would have suggested to those of ordinary skill in the art. See In re Keller et al., 208 U.S.P.Q 871.

7. Applicant's arguments filed August 05, 2002 have been fully

considered but they are not deemed to be persuasive; the amendment necessitates new ground of rejection.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Thai whose telephone number is 703-305-3842.

The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Matthew M. Kim can be

reached on (703) 305-3821.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900. The Official Fax Numbers for TC-2100 are:

After-final	***(703) 746-7238***
Official	***(703) 746-7239***
Non-Official/Draft	***(703) 746-7240***

TVT/October 16, 2003

Tuan V. Thai
PRIMARY EXAMINER
Group 2100